

A.2.39 AOC 34

Description

Tank Basin 315, located in the west-central portion of the Main Yard, was identified as a new AOC in correspondence from Chevron to the EPA, dated November 21, 2000. AOC 34 was added based on an apparent release noted in inspection records. The records indicate that Tank 315 was temporarily removed from service in 1969 due to a leak from the 12-inch diameter cleanout nozzle. Tank 315 contained a light petroleum hydrocarbon at the time the leak occurred.

AOC 34 is triangle-shaped and measures approximately 800 feet in perimeter, encompassing approximately 25,000 square feet. The AST, Tank 315, is constructed of welded steel rings with a steel bottom plate. The tank has a diameter of 95 feet, a height of 48 feet, and a capacity of 60,599 Bbls. Refinery records indicate that Tank 315 and Tank Basin 315 were constructed in 1951. Tank 315 was taken out of service in 1983. Product stored in Tank 315 included Rheniformer charge stock and straight run (gasoline). The product was transferred into and out of Tank 315 through above ground pipes located on the southern portion of the tank.

As shown on Figure A.2.35 and summarized on Table A.2.35, three borings, ten soil samples, and one groundwater sample have been used to characterize AOC 34. Additionally, selected borings and samples from adjacent areas (e.g., Phase I OWSS Areas MY1 and NF2) are included on Table A.2.35 for delineation purposes. Soil samples were collected from the surficial soils, fill material, and native material and analyzed for TCL VOCs and SVOCs TAL metals. One sample was also analyzed for SPLP metals and physical characteristics¹.

Soils

The following table summarizes the number of samples where the soil delineation criteria were exceeded within AOC 34:

¹Physical characteristics specified in Appendix A, Task IV of Module III of the HWSA Permit included saturated and unsaturated permeability tests, moisture content, relative permeability, bulk density, porosity, soil sorptive capacity, CEC, TOC, pH, Eh and grain size distribution.

Constituents of Concern	Surface Soils (0 to ft)	Fill Material (>2 ft)	Native Soils	Totals
Benzene	0/3	1/4	0/3	1/10
Other VOCs	0/3	0/4	0/3	0/10
Benzo(a)pyrene	0/3	0/4	0/3	0/10
Other SVOCs	0/3	0/4	0/3	0/10
Lead	0/3	1/4	0/3	1/10
Arsenic	0/3	1/4	0/3	1/10
Other TAL Metals ^a	0/3	1/4	0/3	1/10

^aTotals do not include naturally occurring metal compounds in excess of the delineation criteria (Al, Ca, Fe, Mg, Mn, K and Na).

Surface Soils

Although some evidence of petroleum impacts were noted in the surficial fill at S0757, no COCs were detected above the soil delineation criteria in the surficial soil sample (S0757A2/A4) from this location or in the other two surficial soil samples collected within AOC 34.

Fill Materials (>2 feet bgs)

Many of the borings installed within AOC 21 exhibited evidence of petroleum impacts (e.g., staining, odor, elevated PID readings, etc.) within the fill material. The fill layer ranges in thickness approximately 5 to 12 feet.

Benzene (3.85 mg/kg) was detected above the applicable soil delineation criterion in one of the four subsurface fill samples (e.g., S0756B2). This sample (S0756B2) also contained a number of metals above the applicable soil delineation criteria, including antimony (23.1 mg/kg), arsenic (29.6 mg/kg), naturally-occurring iron (51,700 mg/kg), and lead (447 mg/kg). Arsenic (25.3 mg/kg) was also detected above the applicable delineation criterion in S0758C2. These arsenic concentrations (25.3 and 29.6 mg/kg) are within the normal range for soils, particularly glauconitic soils in the Coastal Plain (Saunders, 2003).

The SPLP sample from S0757 (S0757B4) contained 2.71 mg/L of naturally-occurring aluminum which slightly exceeds the applicable criterion for SPLP aluminum (2.2 mg/L)². No other metals were detected above applicable SPLP criteria in this sample. Therefore, the soils are not a source of metal impacts to groundwater.

Native Material

A clay/sand layer underlies the fill unit at depths ranging from approximately 5 to 12 feet bgs. The three native soil samples collected within this AOC contained no exceedances of the soil delineation criteria, except for naturally-occurring iron. Therefore, the site-related soil impacts have been delineated vertically.

²Based on the groundwater criterion for aluminum (200 ug/L), DAF = 11.

As discussed further in Section 6 of the RFI Report, lateral delineation of selected COCs has been completed on a site-wide basis for each Yard. The delineation of these COCs is depicted graphically on the figures provided in Section 6.

Groundwater

Recent groundwater samples from MW-159 in October 2002 and March 2003, were analyzed for TCL VOCs and SVOCs, TAL metals, and water quality. The only constituent detected in the October 2003 sample above the groundwater delineation criteria was arsenic (10.9 µg/L). No COCs were detected above the groundwater delineation criteria in the March 2003 sample from this well. As discussed in Section 8 of the RFI Report, groundwater in the vicinity of AOC 34 was investigated as part of the site-wide groundwater monitoring investigation portion of the RFI.

Summary

In summary, no exceedances of the soil delineation criteria were detected in surficial soils within AOC 34, although exceedances of benzene and several metals were detected above the soil delineation criteria in subsurface samples (e.g., greater than 2 feet bgs) from the fill layer. Native soils contained no exceedances, indicating that exceedances have been delineated vertically. Impacted soils at this AOC will be included for further evaluation in the CMS. Likewise, potential impacts to groundwater in the vicinity of AOC 34 will be included as part of the site-wide groundwater evaluation in the CMS.